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10/553,398	08/31/2006	Giuseppe Lo Biundo	Q89568	8985

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EXAMINER	
WEINSTEIN, LEONARD J	

ART UNIT	PAPER NUMBER
3746	

NOTIFICATION DATE	DELIVERY MODE
06/29/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/553,398	LO BIUNDO ET AL.	
	Examiner	Art Unit	
	LEONARD WEINSTEIN	3746	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 April 2011*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-6,8 and 9* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4-6,8 and 9* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 16, 2011 has been entered.

2. The examiner acknowledges the amendments to claims 1 and 8. The examiner notes that claims 10 and 11 have been canceled.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. The factual inquiries set forth in *Graham* v. *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 1, 2, 4-6, 8, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Whitefield US 5,282,446 ("Whitefield") in view of Schneider US

6,345,600 (Schneider) as evidenced by Garza US 5,535,643 ("Garza"), further in view of Sato US 5,941,203 ("Sato"), still further in view of further in view of Hayam et al. US 6,602,557 ("Hayman").

a. With respect to **claims 1 and claim 8**

i. **Whitefield** –

Whitefield teaches all the limitations for an oil and vacuum pump group including:

[claim 1]

a monolithic motion transmission shaft 15 extending along a main axis X-X (longitudinal axis of the water pump 11, oil pump 10, and vane pump (Whitefield discloses that the assembly including pumps 10 and 40 could include several types of the pumps including a vacuum pump. As pump 40 is a vane pump and generally analogous to a pump that use a vane to produce a vacuum (See Scheider, element 20), element 40 in the embodiment of figure 2 of Whitefield provides a suitable location and linkage wherein a vacuum pump could be located. This embodiment encompassed by the specification at col. 1 ll. 26-28. Herein after the vacuum pump of Whitefield will be referred to as "**40'**") in the embodiment of figure 2; "pump axis"), at least one oil pump 10 mounted on said monolithic motion transmission shaft 15 coaxially to said main axis X-X (pump axis), at least one vacuum pump 40' mounted on said single motion transmission shaft 15 coaxially to said main axis X-X (pump axis), a

rotating transmission component 42 on said monolithic motion transmission shaft 15 coaxially said main axis X-X (pump axis) and adapted to derive a rotary motion from an engine (not shown, see Whitefield – Abstract) and to transfer said rotary motion to said monolithic motion transmission shaft 15 to drive said at least one oil pump 10 and said at least one vacuum pump 40', wherein the oil and vacuum pump group (10 and 40') is structurally independent from and adapted to be associated with said engine (col. 2 ll. 16-19).

Whitefield teaches all the limitations as claimed for a method for assembling an oil and vacuum pump group for an engine (not shown; col. 2 ll. 16-19) including the steps of:

[claim 8]

Providing a monolithic motion transmission shaft 15 extending along a main axis X-X (pump axis),

providing at least one oil pump 10,

providing at least one vacuum pump 40',

providing a rotating transmission component 42 so as to define a group which is structurally independent from and adapted to be associated with said engine (not shown).

b. **Monolithic Shaft** -

i. **Schneider as evidenced by the instant application and Garza** –

Whitefield teaches a pump group, including an oil and vacuum pump, located on a monolithic transmission shaft, but does teach the feature taught by Schneider for an oil and vacuum pump group (Schneider – Fig. 1) located on the same shaft that includes a gear (sprocket 22) adapted to derive rotary motion from an engine and transfer it to a monolithic shaft (Schneider – col. 2 ll. 10-13).

The sprocket 22 of Schneider meets the limitations of a gear as provided in the instant application which discloses that element 40 is "[a] gear 40, specifically a sprocket . . . ." App. at pg. 9, ll. 4. The disclosure and figure 2 of Garza teach that a driven sprocket 28, analogous to the sprocket of Schneider, are typically used in conjunction with a chain 26 that connects to a driving sprocket 28 which is driven by an engine 10. Garza, col. 2 ll. 45-8. Thus Schneider as applied to Whitefield would provide a gear that adapted to derive rotary motion from a driving gear if it were connected by a chain to a gear connected to the end of an engine shaft. Whitefield, Schneider, and Garza all teach rotary components driven by an internal combustion engine through a linkage of either a pulley or chain and sprocket.

ii. **Motivation for Combination Provided by Sato** –

Where a claimed improvement on a device or apparatus is no more than "the simple substitution of one known element for another or the mere application of a known technique to a piece of prior art ready for improvement," the claim is unpatentable under 35 U.S.C. 103(a). *Ex Parte Smith*, 83 USPQ.2d 1509, 1518-19 (BPAI, 2007) (*citing KSR v. Teleflex*, 127 S.Ct. 1727, 1740, 82 USPQ2d 1385, 1396 (2007)). A claim for a combination that only unites old elements with no change in the respective functions of those old elements, and the combination of those elements yields predictable results; absent evidence that the modifications necessary to effect the combination of elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a). *Ex Parte Smith*, 83 USPQ.2d at 1518-19 (BPAI, 2007) (*citing KSR*, 127 S.Ct. at 1740, 82 USPQ2d at 1396.

Sato teaches it was known in the art at the time of the invention for chain and sprockets arrangements to be interchanged with belt and pulley assemblies for driving rotating components using the motion of a rotating shaft of an internal combustion engine to which the rotating components were not directly connected. Sato, col. 6 ll. 48-54. A belt and pulley arrangement functions in a nearly identical manner to a sprocket and chain

arrangement. In the modification the driving pulley would be replaced by a driving sprocket. Instead of placing a belt around the driving sprocket a chain would be provided. Finally the chain would then be place around the driven sprocket (the chain may be unlinked and upon placement around the driven sprocket its ends are linked together) just as the belt had been provided around the driven pulley connected to the rotating equipment. The driven sprocket would be driven to rotate with the rotation of the driving sprocket transmitted to the driven sprocket through the chain just as the belt had transmitted the rotary motion of the driving pulley to the driven pulley. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify a vacuum and oil pump group driven by a belt and pulley arrangement, as taught by Whitefield, with a sprocket and chain arrangement, as taught by Schneider, because the sprocket and chain would transmit the motion of the engine in the same way as the belt and pulley.

Accordingly, since the applicant[s] have submitted no persuasive evidence that the combination of the above elements is uniquely challenging or difficult for one of ordinary skill in the art, the claim is unpatentable as obvious under 35 U.S.C. 103(a) because it is no more than the predictable use of prior art elements

according to their established functions resulting in the simple substitution of one known element for another.

iii. **Gear Located between oil and vacuum pump** –

(1) A combination of the references teaches the limitations as discussed but does not the limitations taught by Hayman for an oil pump (40, 44) driven through a gear 48 by an internal combustion engine 10 where a gear is disposed between an oil pump (44 of 40 and 44) and a secondary pump (as provided by vanes 58).

(2) It has been held that rearranging parts of an invention involves only routine skill in the art. *In re Japikse*, 86 USPQ 70.

(3) A modification to Whitefield, previously modified to have a sprocket as taught by Schneider, so that the sprocket was placed between the oil pump 10 and the vacuum pump 40 would not alter the operation of either pump. Both pumps would still rotate by the motion transmitted to the sprocket by the chain from the driving sprocket connected to an internal combustion engine. The examiner notes that if the pulley 42 of Whitefield were place between the pumps the rotating equipment would function as they did before as well. The modification would amount to a rearrangement of parts with no resulting change in function of the vacuum, oil, or water pump of Whitefield. It would have been obvious to one having ordinary skill in the art at the time the

invention was made to provide a sprocket between a vacuum pump and an oil pump in order to provide a pump group driven by an internal combustion engine.

c. With respect to claims 2, 4-6, and 9 Whitefield teaches the limitations including:

[claim 2]

wherein said at least one oil pump 10 and said at least one vacuum pump 40 are units which are structurally independent from each other (col. 3 ll. 54-60);

[claim 4]

wherein said at least one oil pump 10 is a single-stage or two-stage pump;

[claim 5]

comprising means (body of 12; col. 3 ll. 26-30; 50-62) for the attachment to an engine block (not shown);

[claim 6]

wherein said means (body of 12 and element 15; col. 3 ll. 26-30; 60-62) for the attachment to an engine block (not shown) comprises a plurality of brackets 50 intended to cooperate with respective brackets (brackets that receive element 50; col. 3 ll. 26-30) formed on said engine block (not shown);

[claim 9]

and an engine (col. 2 ll. 16-20), comprising an oil 10 and vacuum 40 pumps group according to claim 1.

Response to Arguments

6. Applicant's arguments in the Amendment of March 16, 2011, with respect to claims 1, 2, 4-6, 8, and 9, were considered by the examiner in the Advisory Action of March 24, 2011. No new arguments have been presented, the examiner's response to applicant's arguments is repeated below.

7. With respect to the rejection of the limitations including claims 8 and 11 as previously presented in the Amendment of October 8, 2010 and now incorporated into claim 8, the applicant argues that the combination including Whitefield US 5,282,446 ("Whitefield") in view of Schneider US 6,345,600 (Schneider) as evidenced by Garza US 5,535,643 ("Garza"), further in view of Sato US 5,941,203, still further in view of Hayam et al. US 6,602,557 ("Hayman") does not render the instant invention obvious under 35 U.S.C. 103(a). The applicant argues that it is improper to construe the vanes 58 of the secondary pump, defined by the vanes 58 and gear 48 of Hayman, as being related to the oil and vacuum pump of Scheider. The applicant also argues that if construed as a pump the vanes 58 would be adjacent to an oil pump and not an arrangement where a gear was between an vacuum pump and an oil pump.

The examiner notes several things about Whitefield, Schneider, and Hayman. Whitefield teaches two embodiments, one including a vane pump and one without. To accommodate the vane pump Whitefield moves an input drive member outwards and installs a vacuum pump in an isolated housing between the input drive member and the

oil pump. Thus, Whitefield actually provides a teaching of rearranging parts, and significantly, one of the parts that is rearranged is a drive input member, to accommodate another pump.

There are both significant similarities and differences with Whitefield, Schneider, and Hayman. In Whitefield there are three pumps including the centrifugal impeller on the left side of the oil pump. The impeller of Whitefield is disposed on the end of the combined shaft and adjacent to an oil pump in a very similar manner to the rotating vane pump constructively formed by the vanes 58, and a first oil pump of Hayman. With the impeller, Whitefield provides three fluid conveying pumps on one combined drive shaft in the order of an impeller, oil pump, vacuum pump, and input drive. Hayman provides four pumps and a rotating input member consisting in order of an impeller, a gear (input), first oil pump, second oil pump, and vacuum pump. By the applicant's own interpretation the vanes and gear are a pump, and not a gear in between two pumps. Under this construction Hayman teaches an impeller, first oil pump, second oil pump, and vacuum pump. The difference in the arrangements of Whitefield and Hayman, is that there is a shaft and an entirely separate pump between the first oil pump and the vacuum pump in Hayman. Schneider teaches a different arrangement of a drive input, oil pump, and then a vacuum pump. This is similar to Whitefield in that the oil and vacuum pumps are adjacent but also similar to Hayman in that a drive input is adjacent to an oil pump.

It will be noted however that Hayman and Schneider teach an input member that is at the opposite end of a drive shaft from a vacuum pump, whereas Whitefield includes

a drive member that is adjacent to a vacuum pump. Together the references teach that the drive input for a shaft, an oil pump, and a vacuum pump can be arranged in different configurations on a drive shaft. Hayman teaches an input next to an oil pump; Whitefield teaches an input that can be moved to accommodate another pump next to a vacuum pump. Both Whitefield and Hayman teach what could be interpreted as an impeller on the same side of an oil pump. The degree of variation and order, specifically with respect to where an input is located, would lead one of ordinary skill in the art to conclude (1) that it was obvious (2) and the prior art suggested that another iteration of a combination of similar pumps on a single shaft would include a gear or a drive input between two of the pumps. This is especially true and applicable to Whitefield, because the reference actually teaches rearranging where a drive input is located to accommodate the addition of another pump.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to LEONARD J. WEINSTEIN whose telephone number is (571)272-9961. The examiner can normally be reached on Monday - Thursday 7:00 - 5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Devon Kramer can be reached on (571) 272-7118. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Devon C Kramer/
Supervisory Patent Examiner, Art Unit 3746

/Leonard J Weinstein/
Examiner, Art Unit 3746